TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-06-02-04** **Date: 05-06-2017**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC Drain from 11th A Cross to 5th Main BEL Layout 3rd Block in Ward No. 09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri. T.K. Shankarappa No.60, Annanthapura Village, S.N Halli(P), Yelahanka, Bangalore-560 004
Customer's Reference	:	BBMP/EE/BTP/WO/65/2017-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-06-17
Sample ID No	:	2017-06-02-04/01
Sample Type	:	Zuari 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	03-06-17

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.82	_
2	Finess by Air permeablity method (m^2/kg, Min)	272.5	225m^2/kg, Min
3	Density (gm/cc)	3.17	_
4	Standard Consistency (%)	29.5%	Not specified
5	Initial Setting time	165 minutes	Not less than 30 minutes
6	Final Setting time	280 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

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Prepared by
Harshitha

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AE

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-06-02-04** **Date: 01-07-2017**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC Drain from 11th A Cross to 5th Main BEL Layout 3rd Block in Ward No. 09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri. T.K. Shankarappa No.60, Annanthapura Village, S.N Halli(P), Yelahanka, Bangalore-560 004
Customer's Reference	:	BBMP/EE/BTP/WO/65/2017-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-06-17
Sample ID No	:	2017-06-02-04/01
Sample Type	:	Zuari 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	03-06-17

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	56.5N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-06-02-04** **Date: 07-06-2017**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC Drain from 11th A Cross to 5th Main BEL Layout 3rd Block in Ward No. 09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri. T.K. Shankarappa No.60, Annanthapura Village, S.N Halli(P), Yelahanka, Bangalore-560 004
Customer's Reference	:	BBMP/EE/BTP/WO/65/2017-16
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	02-06-17
Sample ID No	:	2017-06-02-04/02
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	02-06-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	150	150	1.0	99.0	90-100
3	20 mm	7324	7474	49.8	50.2	30-70
4	10 mm	5292	12766	85.1	14.9	10-35
5	4.75 mm	2074	14840	98.9	1.1	0-5
6	Pan	160	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-06-02-04** **Date: 07-06-2017**

Sample ID No : 2017-06-02-04/02

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.1	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.0	
3	Specific Gravity	2.61	_
4	Bulk Density(Loose) (Kg/l)	1.48	_
5	Bulk Density(Compacted) (Kg/l)	1.54	_
6	Water Absorption(%)	0.28	_

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Quality Manager

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TEST REPORT OF FINE AGGREGATE

Lab ID	:	**CP-2017-06-02-04** **Date: 07-06-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC Drain from 11th A Cross to 5th Main BEL Layout 3rd Block in Ward No. 09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri. T.K. Shankarappa No.60, Annanthapura Village, S.N Halli(P), Yelahanka, Bangalore-560 004
Customer's Reference	:	BBMP/EE/BTP/WO/65/2017-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-06-17
Sample ID No	:	2017-06-02-04/03
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	02-06-17
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0	100	100	100	100	100
2	4.75 mm	19	19	1.9	98.1	90-100	90-100	90-100	95-100
3	2.36 mm	95	114	11.4	88.6	60-95	75-100	85-100	95-100
4	1.18 mm	274	388	38.8	61.2	30-70	55-90	75-100	90-100
5	600 micron	282	670	67	33.0	15-34	35-59	60-79	80-100
6	300 micron	151	821	82.1	17.9	5-20	8-30	12-40	15-50
7	150 micron	145	966	96.6	3.4	0-10	0-10	0-10	0-15
8	Pan	34	1000	100	0	---	---	---	---
Result :The tested Sample Conforms to Grading Zone II									

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-06-02-04** **Date: 07-06-17**

Sample ID No : 2017-06-02-04/03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.85	–
2	Specific Gravity	2.58	–
3	Material finer than 75 micron(%)	3.1	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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Prepared by
Harshitha

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-06-16-01** **Date: 20-06-17**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Construction of RCC Drain from 11th A Cross to 5th Main BEL Layout 3rd Block in Ward No. 09(Vidyaranyapura) Vidyaranyapura Sub Division.

Agency : Sri. T.K. Shankarappa No.60, Annanthapura Village, S.N Halli(P), Yelahanka, Bangalore-560 004

Customer's Reference : BBMP/EE/BTP/WO/65/2017-16

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 16-06-17

Sample ID No : 2017-06-16-01/03

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 20/06/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Concrete	M20	13/06/2017	20/06/2017	150.88 X 150.23 X 151.01	22667	8.317	410.3	18.1	18.3
2	Drain Concrete	M20	13/06/2017	20/06/2017	149.72 X 150.64 X 150.44	22554	8.142	410.5	18.2	
3	Drain Concrete	M20	13/06/2017	20/06/2017	150.74 X 150.99 X 150.64	22760	8.175	421.1	18.5	

Note:
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-06-16-01** **Date: 19-06-17**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Construction of RCC Drain from 11th A Cross to 5th Main BEL Layout 3rd Block in Ward No. 09(Vidyaranyapura) Vidyaranyapura Sub Division.

Agency : Sri. T.K. Shankarappa No.60, Annanthapura Village, S.N Halli(P), Yelahanka, Bangalore-560 004

Customer's Reference : BBMP/EE/BTP/WO/65/2017-16

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 16-06-17

Sample ID No : 2017-06-16-01/02

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 19/06/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Concrete	M20	12/06/2017	19/06/2017	150.44 X 150.71 X 150.65	22673	8.201	403.6	17.8	17.7
2	Drain Concrete	M20	12/06/2017	19/06/2017	149.87 X 150.64 X 150.33	22576	8.199	386.1	17.1	
3	Drain Concrete	M20	12/06/2017	19/06/2017	150.87 X 150.66 X 150.47	22730	8.241	416.0	18.3	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-06-16-01** **Date: 17-06-17**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Construction of RCC Drain from 11th A Cross to 5th Main BEL Layout 3rd Block in Ward No. 09(Vidyaranyapura) Vidyaranyapura Sub Division.

Agency : Sri. T.K. Shankarappa No.60, Annanthapura Village, S.N Halli(P), Yelahanka, Bangalore-560 004

Customer's Reference : BBMP/EE/BTP/WO/65/2017-16

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 16-06-17

Sample ID No : 2017-06-16-01/01

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 17/06/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Concrete	M20	10/06/2017	17/06/2017	150.22 X 150.54 X 150.55	22614	8.145	407.1	18.0	17.9
2	Drain Concrete	M20	10/06/2017	17/06/2017	150.22 X 150.54 X 150.55	22614	8.177	411.6	18.2	
3	Drain Concrete	M20	10/06/2017	17/06/2017	150.22 X 150.54 X 150.55	22614	8.201	395.7	17.5	

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TEST RESULTS OF STEEL

Lab ID	:	**CP-2017-06-14-01** **Date: 16-06-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC Drain from 11th A Cross to 5th Main BEL Layout 3rd Block in Ward No. 09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri. T.K. Shankarappa No.60, Annanthapura Village, S.N Halli(P), Yelahanka, Bangalore-560 004
Customer's Reference	:	BBMP/EE/BTP/WO/65/2017-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	14-06-17
Sample ID No	:	2017-06-14-01/02
Sample Type	:	JSW
Reference to BIS codes	:	IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
Date of test:	:	14-06-17

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	JSW	Fe500	8	0.391	562	671	21.0%	Satisfactory	Satisfactory
2	JSW	Fe500	10	0.614	578	689	19.0%	Satisfactory	Satisfactory
3	JSW	Fe500	12	0.885	592	695	20.0%	Satisfactory	Satisfactory

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TEST REPORT OF PRECAST COVER SLAB

Lab ID	:	**CP-2017-06-14-01** **Date: 17-06-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC Drain from 11th A Cross to 5th Main BEL Layout 3rd Block in Ward No. 09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri. T.K. Shankarappa No.60, Annanthapura Village, S.N Halli(P), Yelahanka, Bangalore-560 004
Customer's Reference	:	BBMP/EE/BTP/WO/65/2017-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	14-06-17
Sample ID No	:	2017-06-14-01/02
Sample Type /Size	:	Precast Cover Slab
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test	:	14-06-17

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(mm)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.11	100.49	1.416	4430	82.4	18.6	17.3	21.6
2	Cover Slab-2	75.08	100.51	1.422	4426	85.1	19.2	17.9	22.3
3	Cover Slab-3	75.05	100.50	1.418	4423	82.5	18.7	17.3	21.7

Note:
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